

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Assistant Commissioner for Patents
United States Patent and Trademark
Office
Box PCT
Washington, D.C. 20231
ÉTATS-UNIS D'AMÉRIQUE

in its capacity as elected Office

Date of mailing: 30 September 1999 (30.09.99)	
International application No.: PCT/GB99/00262	Applicant's or agent's file reference: AJL/IR/P4027
International filing date: 26 January 1999 (26.01.99)	Priority date: 26 March 1998 (26.03.98)
Applicant: RICHARDSON, Christopher	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International preliminary Examining Authority on:
21 June 1999 (21.06.99)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was

☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer: J. Zahra Telephone No.: (41-22) 338.83.38
---	---

THIS PAGE BLANK (USPTO)

PCT

To:

ROYSTONS
Tower Building, Water Street
Liverpool L3 1BA
Merseyside
GRANDE BRETAGNE

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL PRELIMINARY
EXAMINATION REPORT
(PCT Rule 71.1)

Date of mailing
(day/month/year) 12.04.2000

Applicant's or agent's file reference
AJL/IR/P4027

IMPORTANT NOTIFICATION

International application No.
PCT/GB99/00262

International filing date (day/month/year)
26/01/1999

Priority date (day/month/year)
26/03/1998

Applicant
ULTRAFRAME (UK) LIMITED et al.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/

 European Patent Office
D-80298 Munich
Tel. +49 89 2399 - 0 Tx: 523656 epmu d
Fax: +49 89 2399 - 4465

Authorized officer

Rinder, K

Tel. +49 89 2399-2664



THIS PAGE BLANK (USPTO)

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)


Applicant's or agent's file reference AJL/IR/P4027	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/GB99/00262	International filing date (day/month/year) 26/01/1999	Priority date (day/month/year) 26/03/1998
International Patent Classification (IPC) or national classification and IPC F16L3/04		
Applicant ULTRAFRAME (UK) LIMITED et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.
- ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 2 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 21/06/1999	Date of completion of this report 12.04.2000
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Ritter, C Telephone No. +49 89 2399 7316



THIS PAGE BLANK (USPTO)

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/GB99/00262

I. Basis of the report

1. This report has been drawn on the basis of (*substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.*):

Description, pages:

2-5	as originally filed		
1	as received on	24/01/2000 with letter of	18/01/2000

Claims, No.:

8-12	as originally filed		
1-7	as received on	24/01/2000 with letter of	18/01/2000

Drawings, sheets:

1/3-3/3	as originally filed
---------	---------------------

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

4. Additional observations, if necessary:

THIS PAGE BLANK (USPTO)

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/GB99/00262

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-12
	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-12
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-12
	No:	Claims	

2. Citations and explanations

see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

THIS PAGE BLANK (USPTO)

Re Item V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Document US-A-2 915 267, which is considered to represent the most relevant state of the art, discloses (see figures 1 and 2) a connecting device suitable for attaching a pipe to a surface comprising a first part (1) fixable to the surface and a second part (6) slidably attachable to the first part (1) in the direction of the pipe and forming at least partial enclosure for the pipe, the first and second parts having co-operating formations enabling the attachment of the second part to the first part being selectively adjustable, whereby spacing of the pipe from the surface is adjustable, from which the subject matter of claim 1 differs in that the second part is attachable to the first part to a limited extent.

The subject-matter of claim 1 is therefore novel (Article 33(2) PCT).

The problem to be solved by the present invention may therefore be regarded as how to provide a connecting device which is easier to assemble.

The claimed device is provided with abutments in order to attach slidably the both parts to a limited extent. Therefore the second part can be slid down onto the first part with the teeth of the one part engaged with the teeth of the other part whereby the base trip allows that one part is prevented from slipping past the other part.

The solution of this problem proposed in claim 1 of the present application is therefore considered as involving an inventive step (Article 33(3) PCT).

2. Claims 2 to 12 are dependent on claim 1 and as such also meet the requirements of the PCT with respect to novelty and inventive step.

Re Item VII

Certain defects in the international application

1. The features of the claims are not provided with reference signs placed in

THIS PAGE BLANK (USPTO)

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB99/00262

parentheses (Rule 6.2(b) PCT).

THIS PAGE BLANK (USPTO)

TITLE: Connecting Device

DESCRIPTION

This invention concerns connecting devices, especially connecting devices for attaching pipes or other elongate items to underlying surfaces, such as to walls.

A down pipe for delivering water collected in a gutter to a drain is usually attached to a wall using clips that are secured to the wall and fastened around the down pipe. Available clips are of one size and so do not allow for variations in spacing between the down pipe and the wall which occur due to irregularities in the wall and the relative positioning of the guttering to which the down pipe is connected at its top. Because of the above, sometimes clips cannot be fastened properly and so spring open or strain is put on the down pipe affecting its connection to the guttering or its other fastening clips.

An object of this invention is to provide a connecting device especially but not exclusively suitable for attaching a pipe to a surface.

A connecting device suitable for attaching a pipe to a surface comprising a first part fixable to the surface and a second part slidably attachable to the first part in the direction of the pipe to a limited extent and forming an at least partial enclosure for the pipe, the first and second parts having co-operating formations enabling the attachment of the second part to the first part to be selectively adjustable, whereby spacing of the pipe from the surface is adjustable.

THIS PAGE BLANK (USP)

CLAIMS

1. A connecting device suitable for attaching a pipe to a surface comprising a first part fixable to the surface and a second part slidably attachable to the first part in the direction of the pipe to a limited extent and forming an at least partial enclosure for the pipe, the first and second parts having co-operating formations enabling the attachment of the second part to the first part to be selectably adjustable, whereby spacing of the pipe from the surface is adjustable.
2. A device as claimed in claim 1, wherein the first part is U-shaped providing a base, which is arranged to be fixed to the surface, and arms extending from the base.
3. A device as claimed in claims 1 or 2, wherein the second part is U-shaped having a base and an arm extending from each end of the base.
4. A device as claimed in claim 3, wherein the arms of the first and second parts are selectively interengageable.
5. A device as claimed in claim 4, wherein inner faces of the arm of one part have a series of spaced teeth which are selectively engageable between corresponding teeth on outer faces of the arms of the other part.
6. A device as claimed in claim 5, wherein the teeth of the outer faces of the arms of the other part are within channels in the arms.
7. A device as claimed in claim 5 or 6, wherein the respective series of teeth are arranged so that the two parts of the device are only engageable to a limited extent, whereby one part is prevented from slipping past the other part.

THIS PAGE BLANK (USPTO)

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference AJL/IR/P4027	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/GB 99/ 00262	International filing date (day/month/year) 26/01/1999	(Earliest) Priority Date (day/month/year) 26/03/1998
Applicant ULTRAFRAME (UK) LIMITED et al.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 2 sheets.



It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.



the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :



contained in the international application in written form.



filed together with the international application in computer readable form.



furnished subsequently to this Authority in written form.



furnished subsequently to this Authority in computer readable form.



the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.



the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,



the text is approved as submitted by the applicant.



the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,



the text is approved as submitted by the applicant.



the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.



as suggested by the applicant.



because the applicant failed to suggest a figure.



because this figure better characterizes the invention.

1



None of the figures.

THIS PAGE BLANK (USPTO)

To:

ROYSTONS
Tower Building, Water Street
Liverpool L3 1BA
Merseyside
GRANDE BRETAGNE

FILE No	PA027	TECHNICAL	ATK
DEADLINE	17. 2. 2000		
COMPUTER	ENTERED	CHECKED	
	DCM		

PCT

WRITTEN OPINION

(PCT Rule 66)

② DCM

Date of mailing
(day/month/year) 17. 11. 99

Applicant's or agent's file reference

AJL/IR/P4027

REPLY DUE

within 3 month(s)
from the above date of mailing

International application No.

PCT/GB99/00262

International filing date (day/month/year)

26/01/1999

Priority date (day/month/year)

26/03/1998

International Patent Classification (IPC) or both national classification and IPC

F16L3/04

Applicant

ULTRAFRAME (UK) LIMITED et al.

1. This written opinion is the first drawn up by this International Preliminary Examining Authority.

2. This opinion contains indications relating to the following items:

- I ☒ Basis of the opinion
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain document cited
- VII ☒ Certain defects in the international application
- VIII ☒ Certain observations on the international application

3. The applicant is hereby invited to reply to this opinion.

When? See the time limit indicated above. The applicant may, before the expiration of that time limit, request this Authority to grant an extension, see Rule 66.2(d).

How? By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3. For the form and the language of the amendments, see Rules 66.8 and 66.9.

Also: For an additional opportunity to submit amendments, see Rule 66.4.
For the examiner's obligation to consider amendments and/or arguments, see Rule 66.4 bis.
For an informal communication with the examiner, see Rule 66.6.

If no reply is filed, the international preliminary examination report will be established on the basis of this opinion.

4. The final date by which the international preliminary examination report must be established according to Rule 69.2 is: 26/07/2000.

Name and mailing address of the international preliminary examining authority:



European Patent Office
D-80298 Munich
Tel. +49 89 2399 - 0 Tx: 523656 epmu d
Fax: +49 89 2399 - 4465

Authorized officer / Examiner

Ritter, C

Formalities officer (incl. extension of time limits)

Rinder, K

Telephone No. +49 89 2399 2664



THIS PAGE BLANK (USPTO)

I. Basis of the opinion

1. This opinion has been drawn on the basis of (*substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed"*).

Description, pages:

1-5 as originally filed

Claims, No.:

1-12 as originally filed

Drawings, sheets:

1/3-3/3 as originally filed

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

3. This opinion has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

4. Additional observations, if necessary:

V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

Novelty (N)	Claims 1-12
Inventive step (IS)	Claims
Industrial applicability (IA)	Claims

2. Citations and explanations

see separate sheet

THIS PAGE BLANK (USPTO)

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

THIS PAGE BLANK (USPTO)

Reference is made to the following documents:

D1: FR-A-1 559 036
D2: US-A-2 915 267
D3: FR-A-2 348 423

Re Item V

Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Document D1 discloses (see figures especially figures 9 and 10) a connecting device suitable for attaching a pipe to a surface comprising a first part (1) fixable to the surface (7,6) and a second part (11) attachable to the first part (1) and forming at least partial enclosure for the pipe, the attachment of the second part to the first part being selectively adjustable (36,35), whereby spacing of the pipe from the surface is adjustable.

Document D1, which is considered to represent the closest prior art, discloses all the features of claim 1. Consequently claim 1 is not new in the sense of Article 33(2) PCT.

It should be noted that the features appearing in claim 1 are also known from documents D2 and D3.

2. Document D1 also reveals the features of claims 2 to 12.

For example, document D1 discloses (see figures) a device with a first and second part U-shaped (claims 2 and 3). Document D1 also discloses (see figures 9 and 10) a device wherein the teeth of the outer faces of the arms of the other part are within channels in the arms (claim 6).

These claims therefore also do not meet the requirements of Article 33(2) PCT.

Re Item VII

Certain defects in the international application

THIS PAGE BLANK (USPTO)

1. The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).
2. Independent claim 1 is not in the two-part form in accordance with Rule 6.3(b) PCT.

Re Item VIII

Certain observations on the international application

1. Claim 1 does not meet the requirements of Article 6 PCT in that the matter for which protection is sought is not clearly defined. Claim 1 attempts to define the subject-matter in terms of the result to be achieved (for example "fixable to the surface", "selectively adjustable", "spacing of the pipe from the surface is adjustable") which merely amounts to a statement of the underlying problem. The technical features necessary for achieving this result should be added.

This lack of clarity also appears in claim 2, 4, 5, 7 and 10.

For example, claim 7 gives just the result to be achieved (two parts only engageable to a limited extent) without technical features necessary for achieving this result.

2. Although claim 1 is directed to a connecting device, it contains features of the pipe and of the surface ("spacing of the pipe from the surface is adjustable"). It is not clear if the invention concerns the connecting device or the combination of the connecting device and the pipe (Article 6 PCT).

THIS PAGE BLANK (USPTO)

INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 99/00262

A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 F16L3/04 F16L3/10 F16L3/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 F16L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2 915 267 A (C. C. KAYSING) 1 December 1959 see claim 1; figures 1,2	1-5
A	---	7,10,11
X	FR 1 559 036 A (DOM HOLDINGS LTD) 7 March 1969 see figures 1-8	1-6
A	---	7,10,11
X	FR 2 348 423 A (HILTI AG) 10 November 1977 see claims 1-5; figures 1-3	1-5

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

8 June 1999

Date of mailing of the international search report

17/06/1999

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Angius, P

THIS PAGE BLANK (USPTO)

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB 99/00262

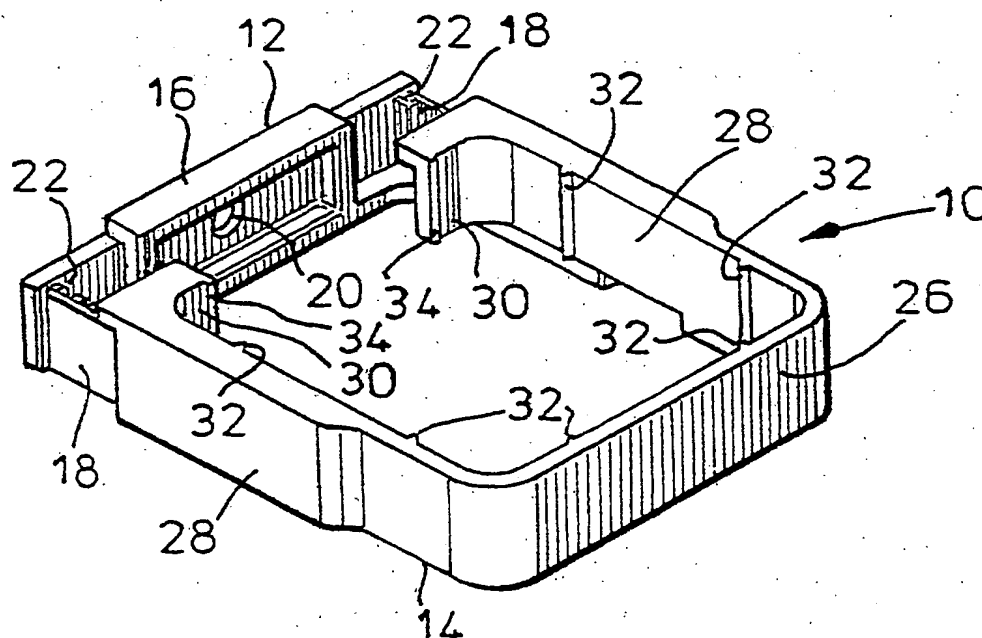
Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 2915267	A	01-12-1959	NONE	
FR 1559036	A	07-03-1969	NONE	
FR 2348423	A	10-11-1977	DE 2616568 A	27-10-1977
			AT 358340 B	10-09-1980
			BE 853496 A	01-08-1977
			CA 1072726 A	04-03-1980
			CH 620278 A	14-11-1980
			FI 771130 A, B,	15-10-1977
			GB 1570820 A	09-07-1980
			SE 7704235 A	21-11-1977
			US 4118838 A	10-10-1978

THIS PAGE BLANK (USPTO)

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<p>(51) International Patent Classification⁶: F16L 3/04, 3/10, 3/00</p>	<p>A1</p>	<p>(11) International Publication Number: WO 99/49253 (43) International Publication Date: 30 September 1999 (30.09.99)</p>
<p>(21) International Application Number: PCT/GB99/00262 (22) International Filing Date: 26 January 1999 (26.01.99) (30) Priority Data: 9806428.0 26 March 1998 (26.03.98) GB (71) Applicant (for all designated States except US): ULTRA-FRAME (UK) LIMITED [GB/GB]; Enterprise Works, Salthill Road, Clitheroe, Lancashire BB7 1PE (GB). (72) Inventor; and (75) Inventor/Applicant (for US only): RICHARDSON, Christopher [GB/GB]; 4 Willow Drive, Barrow, Clitheroe, Lancashire BB7 9FG (GB). (74) Agent: ROYSTONS; Tower Building, Water Street, Liverpool L3 1BA (GB).</p>		<p>(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).</p> <p>Published With international search report.</p>

(54) Title: CONNECTING DEVICE



(57) Abstract

A connecting device (10) for securing a down pipe to a wall comprises a first part (12) fixable to the surface and a second part (14) attachable to the first part and forming an at least partial enclosure for the pipe the attachment of the second part to the first part (22, 44) being selectively adjustable, whereby spacing of the pipe from the surface is adjustable.

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece	ML	Mali	TR	Turkey
BG	Bulgaria	HU	Hungary	MN	Mongolia	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MR	Mauritania	UA	Ukraine
BR	Brazil	IL	Israel	MW	Malawi	UG	Uganda
BY	Belarus	IS	Iceland	MX	Mexico	US	United States of America
CA	Canada	IT	Italy	NE	Niger	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NL	Netherlands	VN	Viet Nam
CG	Congo	KE	Kenya	NO	Norway	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NZ	New Zealand	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	PL	Poland		
CM	Cameroon	KR	Republic of Korea	PT	Portugal		
CN	China	KZ	Kazakhstan	RO	Romania		
CU	Cuba	LC	Saint Lucia	RU	Russian Federation		
CZ	Czech Republic	LI	Liechtenstein	SD	Sudan		
DE	Germany	LK	Sri Lanka	SE	Sweden		
DK	Denmark	LR	Liberia	SG	Singapore		
EE	Estonia						

09/582253

TITLE: Connecting Device

534 Rec'd PCT/PTC 22 JUN2000

DESCRIPTION

This invention concerns connecting devices, especially connecting devices for attaching pipes or other elongate items to underlying surfaces, such as to walls.

A down pipe for delivering water collected in a gutter to a drain is usually attached to a wall using clips that are secured to the wall and fastened around the down pipe. Available clips are of one size and so do not allow for variations in spacing between the down pipe and the wall which occur due to irregularities in the wall and the relative positioning of the guttering to which the down pipe is connected at its top. Because of the above, sometimes clips cannot be fastened properly and so spring open or strain is put on the down pipe affecting its connection to the guttering or its other fastening clips.

An object of this invention is to provide a connecting device especially but not exclusively suitable for attaching a pipe to a surface.

According to this invention there is provided a connecting device suitable for attaching a pipe to a surface comprising a first part fixable to the surface and a second part attachable to the first part and forming an at least partial enclosure for the pipe, the attachment of the second part to the first part being selectively adjustable, whereby spacing of the pipe from the surface may be adjusted.

The first part of the connecting device of the invention is preferably U-shaped providing a base which is arranged to be fixed to the surface, such as, for example, by means of one or more screws or the like through provided holes in the base, and arms extending from the base.

The second part of the connecting device of the invention is preferably also U-shaped having a base and an arm extending from each end of the base. The arms of the ~~first~~ and second parts of the connecting device of the invention are preferably selectively interengageable. The inner faces of the arms of one part preferably have a series of spaced teeth which are selectively engageable between corresponding teeth on outer faces of the arms of the other connecting device part.

The teeth of the outer faces of the arms of the other connecting device part, preferably the second part are preferably within channels in the arms, so that the arms of one part fit into the corresponding channels of the arms of the other part when the respective series of teeth are interengaged.

The respective series of teeth are preferably arranged so that the two parts of the connecting device of the invention can only be engaged to a limited extent in order to prevent them from slipping past each other. Thus, abutments may be provided on each arm for the teeth of an arm of the other part of the device with which it is to engage. The abutments may be provided by base strips from which the teeth of each arm extend. Alternatively, the teeth may be shaped, such as by being triangular in plan, whereby their extent of movement together is limited by said shaping.

The second part of the connecting device of the invention preferably has inwards returns at the ends of its arms, so that a pipe or the like is retained in said second part.

The connector device of the invention is preferably used by fixing the first part to a surface and sliding the second part onto a pipe and down onto the first part to engage the two parts and hold the pipe to the surface. The second part will engage the first part at a desired spacing from the pipe from the surface.

This invention will now be further described, by way of example only, with reference to the accompanying drawings, in which:

Figure 1 is a perspective view from above of a down pipe connecting device according to the invention;

Figure 2 is a perspective view from below of the connecting device of Figure 1;

Figure 3 is a part cut away perspective view from above of the connecting device of Figure 1;

Figure 4 is a perspective view from below of the connecting device of Figure 1 fitted to a down pipe;

Figure 5 is a perspective from above of the connecting device of Figure 1 fitted to a down pipe;

Figure 6A to D shows steps in fitting a connecting device of Figure 1 to a down pipe.

Referring to the accompanying drawings, a connecting device or clip 10 for securing a down pipe 11 to a wall or other surface, such as a mullion or corner

post of a glazed conservatory wall, comprises two parts 12 and 14. The two parts 12, 14 are generally U-shaped and shaped to fit together in an overlapping fashion.

The one part 12 has a base 16 and sides 18 extending generally normally from the base. The base 16 is provided with a screw hole 20 so that it can be secured to a wall or other suitable surface. The sides 18 have on their facing surfaces spaced teeth 22 extending upwards from a base strip 24.

The other part 14 of the clip has a base 26 and sides 28 that turn inwards at their ends 30 to a small extent. The part 14 has its internal corners rounded to correspond to the shape of conventional square section down pipes. Of course, the part 14 of the clip may be of any desired shape, such as to fit circular section pipes. On their internal surfaces, the base 26 and sides 28 and each have a pair of spaced ribs 32. The ends 30 of the sides 28 each also have on their internal surface at the end thereof a rib 34. The ribs 32 and 34 simply facilitate the fitting of the clip to a downpipe by reducing areas of contact and hence reducing friction between the clip and the down pipe.

The sides 28 of the second clip part 14 are wider over a major portion of their length up to their free ends and the wider portions are slotted from below to form channels 42. On the inside of each channel 42 on one face thereof from a base strip 43 extend a series of spaced teeth 44 shaped and sized to interfit between the teeth 22 of the sides 18 of the one part 12. Thus, the second part 14 can be slid down onto the first part 12 with the teeth of the one part engaged with the teeth of the other part at a desired position to give a desired spacing of the

second part from the base 16 of the first part. The respective base strips 24 and 43 limit the extent of interengagement of the teeth.

The clip 10 is used in the following manner as shown in Figures 6A to 6D of the accompanying drawings to fix a down pipe to a wall or other suitable surface. Firstly the first part 12 is fixed to the wall or other suitable surface at a desired location using a screw through the base 16. Then the second part is placed on the down pipe and the down pipe positioned, which may involve coupling thereof to a gutter. The second part of the clip is then slid down onto the first part so that their respective teeth interengage. The two parts of the clip may lock together simply by friction, by mechanical fixings or by engagement of integral locking components.

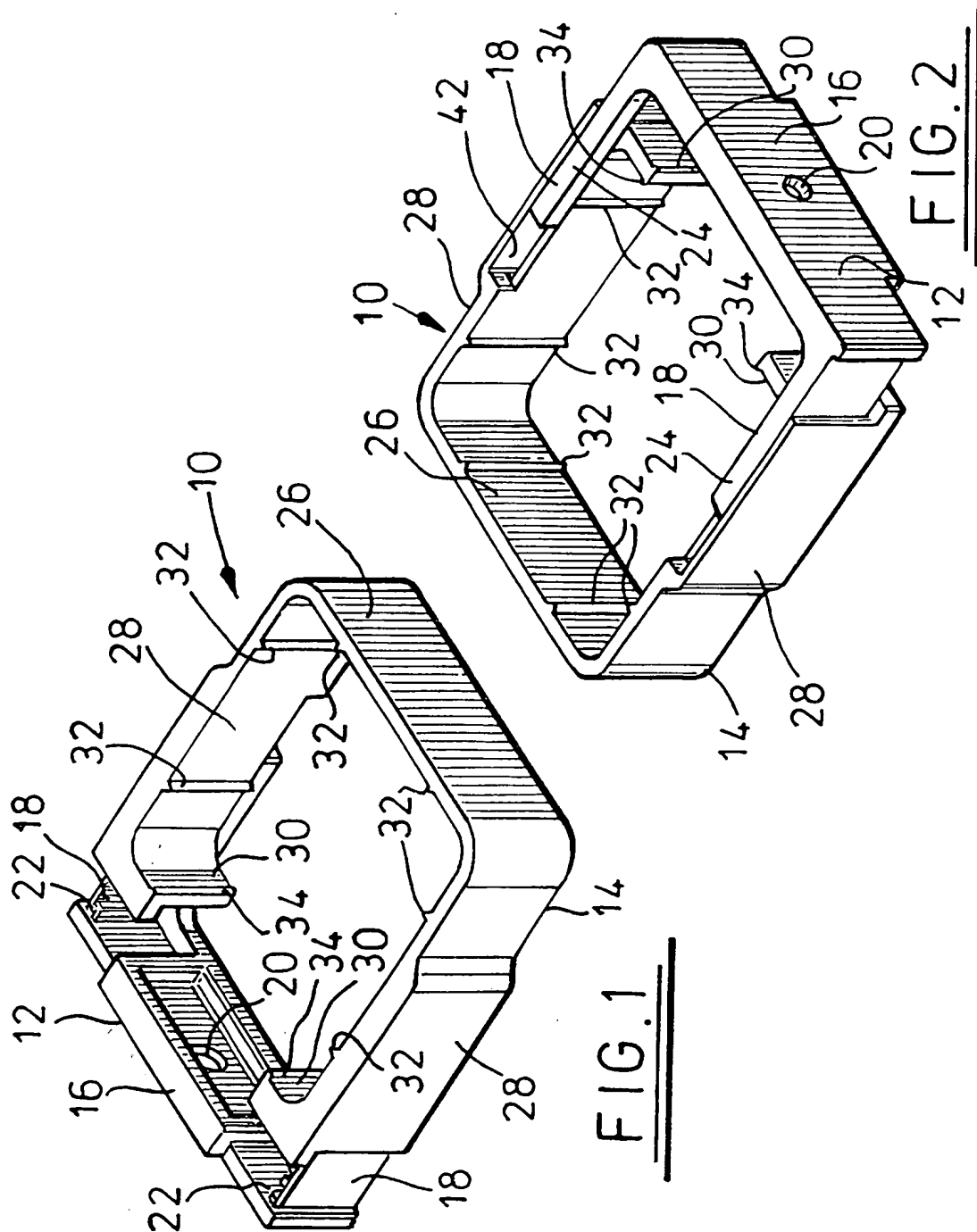
It will be appreciated that whilst the connecting device of the invention has been described in relation to connecting down pipes to a structure, the connecting device of the invention may be used for connecting other elongate items to an underlying structure in any orientation.

CLAIMS

1. A connecting device suitable for attaching a pipe to a surface comprising a first part fixable to the surface and a second part attachable to the first part and forming an at least partial enclosure for the pipe, the attachment of the second part to the first part being selectively adjustable, whereby spacing of the pipe from the surface is adjustable.
2. A device as claimed in claim 1, wherein the first part is U-shaped providing a base, which is arranged to be fixed to the surface, and arms extending from the base.
3. A device as claimed in claims 1 or 2, wherein the second part is U-shaped having a base and an arm extending from each end of the base.
4. A device as claimed in claim 3, wherein the arms of the first and second parts are selectively interengageable.
5. A device as claimed in claim 4, wherein inner faces of the arm of one part have a series of spaced teeth which are selectively engageable between corresponding teeth on outer faces of the arms of the other part.
6. A device as claimed in claim 5, wherein the teeth of the outer faces of the arms of the other part are within channels in the arms.
7. A device as claimed in claim 5 or 6, wherein the respective series of teeth are arranged so that the two parts of the device are only engageable to a limited extent, whereby one part is prevented from slipping past the other part.

8. A device as claimed in claim 7, wherein abutments are provided on each arm for the teeth of an arm of the other part.
9. A device as claimed in claim 8, wherein the abutments are provided by base strips from which the teeth of each arm extend.
10. A device as claimed in claim 7, wherein the respective series of teeth are shaped to limit their extent of movement together.
11. A device as claimed in claim 10, wherein the teeth are triangular in plan.
12. A device as claimed in any one of claims 1 to 10, wherein the second part has inwards returns at the ends of its arms.

THIS PAGE BLANK (USPTO)



THIS PAGE BLANK (USPTO)

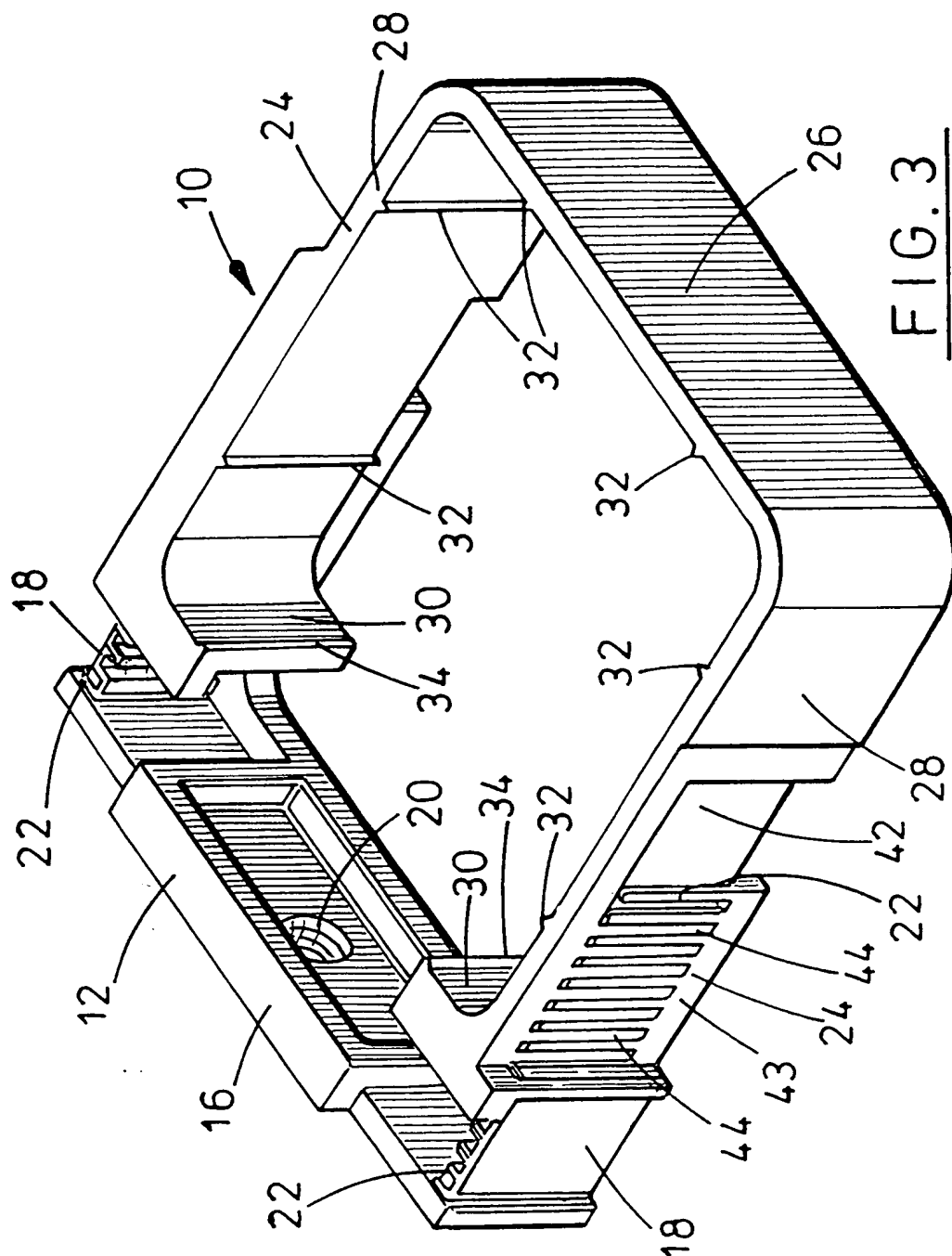
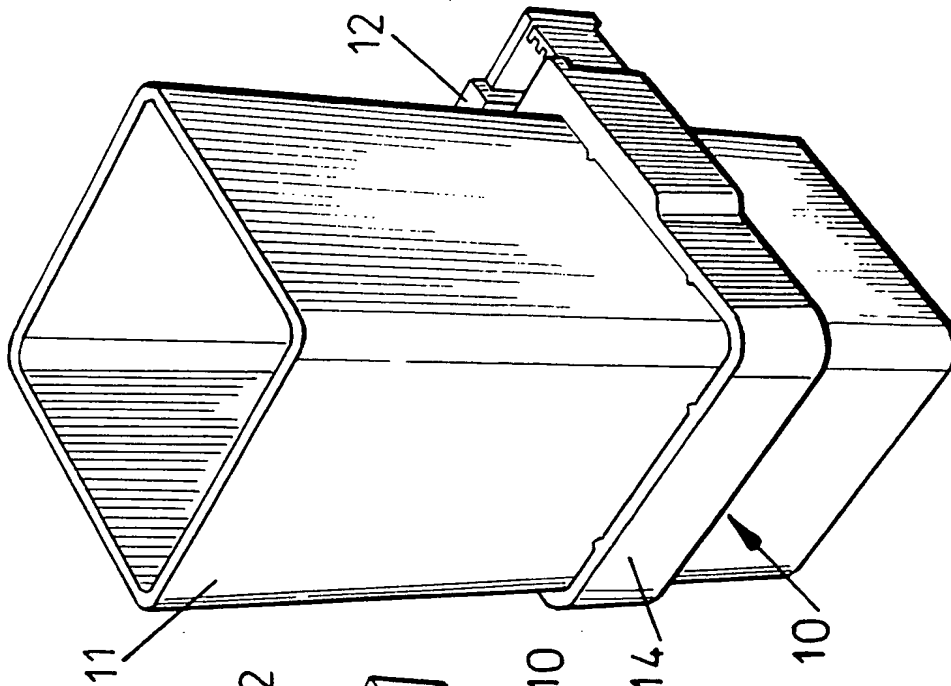


FIG. 3

THIS PAGE BLANK (USPTO)



5.6.5

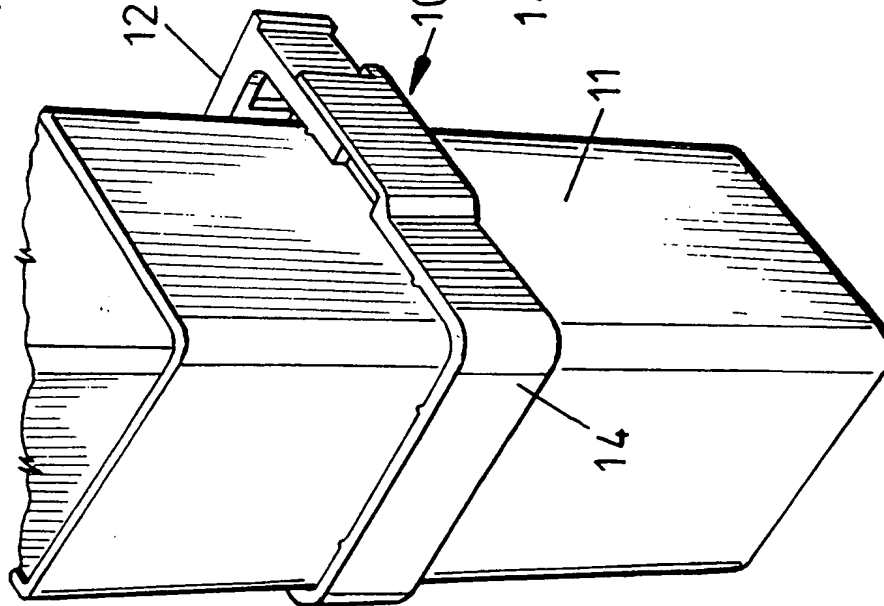


FIG. 4

THIS PAGE BLANK (uspto)

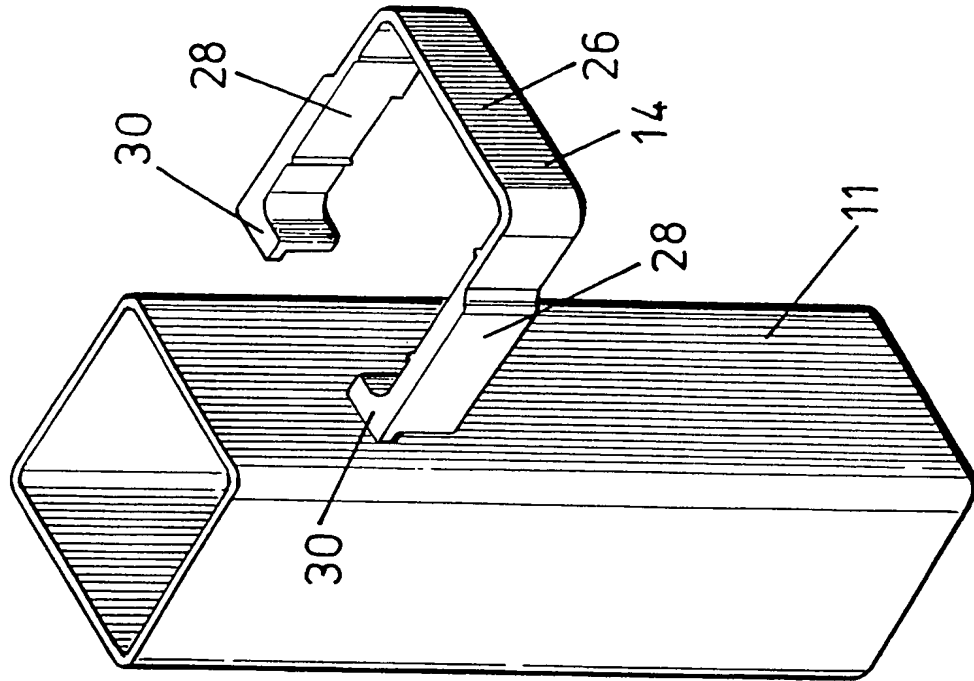


FIG. 6B

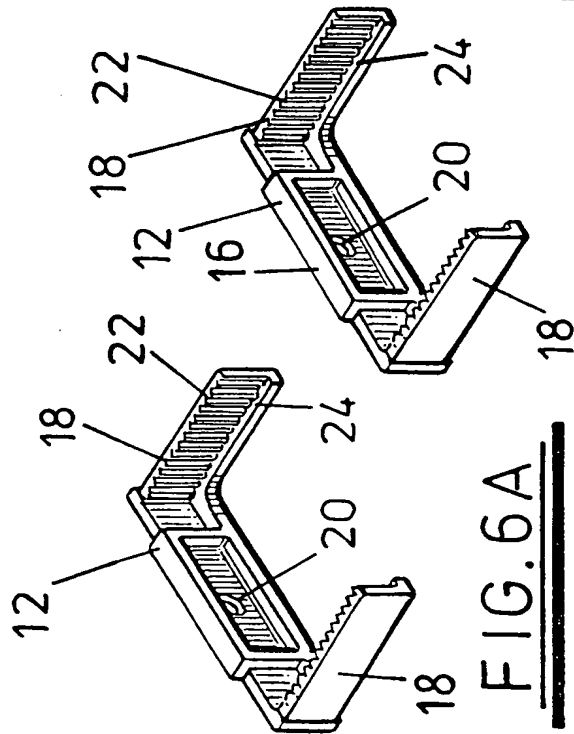


FIG. 6A

THIS PAGE BLANK (USPTO)

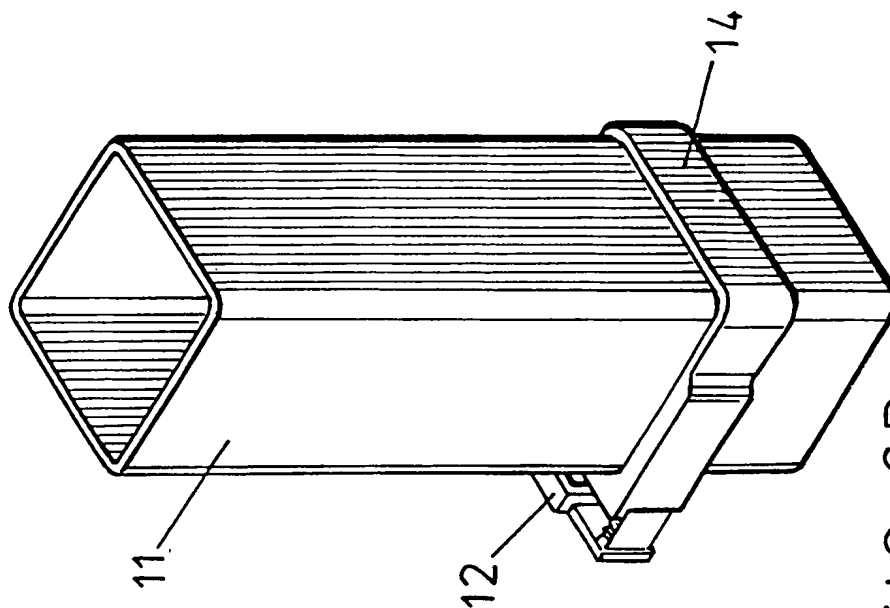


FIG. 6D

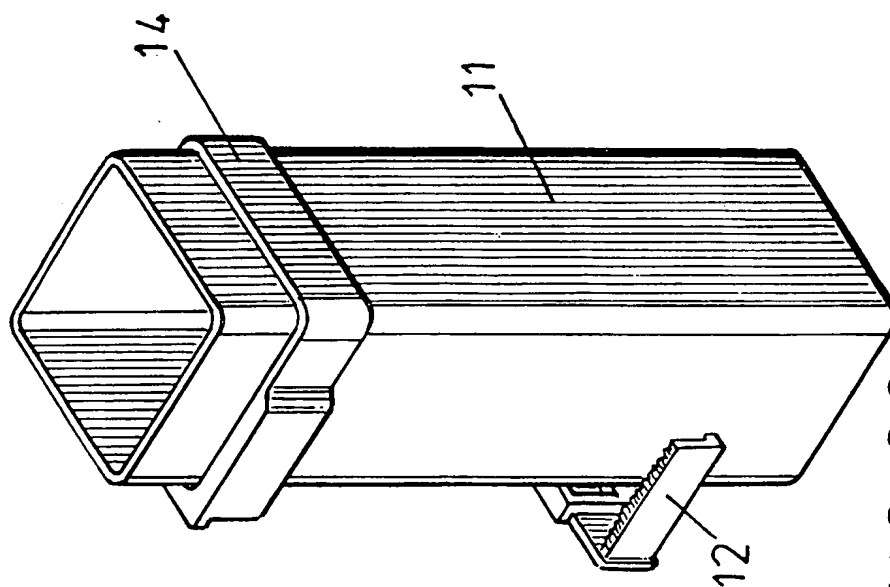


FIG. 6C

THIS PAGE BLANK (USPTO)